CLAIMS:

1. A method of producing a circuit-parts sheet having a structure in which a circuit-forming pattern having light-nontransmitting property is secured in a photo-cured ceramic sheet and is exposed on both surfaces of said photo-cured ceramic sheet, comprising the steps of:

(a) forming the circuit-forming pattern having light-nontransmitting property on a surface of a carrier film having light-transmitting property;

(b) forming a photo-curable ceramic coating layer having a thickness not smaller than the thickness of said circuit-forming pattern and in which said circuit-forming pattern is buried, by applying a photo-curable slurry containing an electrically insulating ceramic material on the surface of the carrier film on which said circuit-forming pattern is formed;

(c) forming a photo-cured ceramic sheet by photo-curing said photo-curable ceramic coating layer by the irradiation with light from the back surface of said carrier film;

(d) removing uncured portions of said photo-curable ceramic coating layer by using a developing solution; and

(e) peeling off said carrier film.

2. A method of producing a circuit-parts sheet according to claim 1, wherein both said photo-cured ceramic sheet and said circuit-forming pattern have thicknesses of not larger than 50 μm, and a difference in the thickness between said photo-cured ceramic sheet and the circuit-forming pattern is not larger than 5 μm.

3. A method of producing a circuit-parts sheet

according to claim 1, wherein said circuit-forming pattern is formed by using at least either one of an electrically conducting material or an electrically insulating ceramic material.

4. A method of producing a circuit-parts sheet according to claim 3, wherein said electrically conducting material contains a metal powder and an organic binder.

5. A method of producing a circuit-parts sheet according to claim 3, wherein said electrically conducting material is a metal foil.

6. A method of producing a circuit-parts sheet according to claim 1, wherein said circuit-forming pattern and a thermally extinguishing pattern are so formed in said step (a) that said circuit-forming pattern and said thermally extinguishing pattern will not be overlapped one upon the other, and the photo-curable ceramic coating layer is so formed in said step (b) that said circuit-forming pattern and said thermally extinguishing pattern are buried therein.

7. A method of producing a circuit-parts sheet according to claim 6, wherein said thermally extinguishing pattern is formed by using a thermally disintegrating resin composition.

8. A method of producing a circuit-parts sheet according to claim 1, wherein one surface of said photo-cured ceramic sheet has a maximum surface roughness Rmax (JIS B 0601) of not smaller than 1 μm.

9. A method of producing a multi-layer circuit board comprising the steps of:

(f) laminating a plurality of pieces of the circuit-parts sheets obtained by the production method of claim 1; and

(g) firing the laminate thereof.

10. A method of producing a multi-layer circuit

board by preparing a circuit-parts sheet which comprises a photo-cured ceramic sheet and a circuit-forming pattern secured to said sheet and having light-transmitting property through the steps (a) to (d) described below and, then, conducting the steps (h) to (k) described below:

(a) forming the circuit-forming pattern having light-nontransmitting property on a surface of a carrier film having light-transmitting property;

(b) forming a photo-curable ceramic coating layer having a thickness not smaller than the thickness of said circuit-forming pattern and in which said circuit-forming pattern is buried, by applying a photo-curable slurry containing an electrically insulating ceramic material on the surface of the carrier film on which said circuit-forming pattern is formed;

(c) forming a photo-cured ceramic sheet by photo-curing said photo-curable ceramic coating layer by the irradiation with light from the back surface of said carrier film;

(d) removing uncured portions of said photo-curable ceramic coating layer by using a developing solution;

(h) preparing a plurality of pieces of the circuit-parts sheets with the carrier film obtained through the step (d);

(i) laminating another circuit-parts sheet with the carrier film on one circuit-parts sheet with the carrier film in a manner that the circuit-parts sheets are opposed to each other, and peeling off the carrier film from the other circuit-parts sheet;

(j) fabricating a laminate having a plurality of pieces of the circuit-parts sheets by repeating the step (i); and

(k) peeling off the carrier film from said one

circuit-parts sheet of the obtained laminate, followed by firing.

11. A method of producing a multi-layer circuit board according to claim 10, wherein both said photo-cured ceramic sheet and said circuit-forming pattern have thicknesses of not larger than 50 μm, and a difference in the thickness between said photo-cured ceramic sheet and the circuit-forming pattern is not larger than 5 μm.

12. A method of producing a multi-layer circuit board according to claim 10, wherein said circuit-forming pattern is formed by using at least either one of an electrically conducting material or an electrically insulating ceramic material.

13. A method of producing a multi-layer circuit board according to claim 12, wherein said electrically conducting material contains a metal powder and an organic binder.

14. A method of producing a multi-layer circuit board according to claim 12, wherein said electrically conducting material is a metal foil.

15. A method of producing a multi-layer circuit board according to claim 10, wherein said circuit-forming pattern and a thermally extinguishing pattern are so formed in said step (a) that said circuit-forming pattern and said thermally extinguishing pattern will not be overlapped one upon the other, and the photo-curable ceramic coating layer is so formed in said step (b) that said circuit-forming pattern and said thermally extinguishing pattern are buried therein.

16. A method of producing a multi-layer circuit board according to claim 15, wherein said thermally extinguishing pattern is formed by using a thermally disintegrating resin composition.

17. A method of producing a multi-layer circuit board according to claim 10, wherein one surface of said cured ceramic sheet has a maximum surface roughness Rmax (JIS B 0601) of not smaller than 1 μm, and the laminate is so formed that the roughened surfaces are opposed to each other.

18. A method of producing a multi-layer circuit board by preparing a circuit-parts sheet which comprises a photo-cured ceramic sheet and a circuit-forming pattern secured to said sheet and is held on a surface of a carrier film having light-transmitting property through the steps (a) to (d) described below and, then, laminating a ceramic green sheet having through-holes filled with a conducting paste on said circuit-parts sheet, and peeling off the carrier film from the obtained laminate, followed by firing:

(a) forming the circuit-forming pattern having light-nontransmitting property on the surface of a carrier film having light-transmitting property;

(b) forming a photo-curable ceramic coating layer having a thickness not smaller than the thickness of said circuit-forming pattern and in which said circuit-forming pattern is buried, by applying a photo-curable slurry containing an electrically insulating ceramic material on the surface of the carrier film on which said circuit-forming pattern is formed;

(c) forming a photo-cured ceramic sheet by photo-curing said photo-curable ceramic coating layer by the irradiation with light from the back surface of said carrier film; and

(d) removing uncured portions of said photo-curable ceramic coating layer by using a developing solution.